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# MEDICAL RESEARCH DEPARTMENT



## U. S. Submarine Base New London

Report on

SUBMARINE DUTY COMPLETED BY ENLISTED PERSONNEL  
ORDERED TO NEW LONDON FOR ASSIGNMENT TO NEW  
CONSTRUCTION

U. S. Naval Medical Research Laboratory  
U. S. Naval Submarine Base  
New London, Connecticut

Lt. (jg) N. R. Barlett, H(S), USNR

31 May 1945

Third Interim Report

Bureau of Medicine and Surgery

Research Project No. X-243 (Sub. No. 47)

APPROVED: Captain C. W. Shilling, (MC) U. S. Navy, MO-in-C

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Report on  
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by  
Lt. (jg) N. R. Bartlett, H(S), USNR

This is a third interim report on Project No. X-243.

Bureau of Medicine and Surgery

Research Project No. X-243 (Sub. No. 47)

Relationship of personnel selection devices to the  
behavior criteria of school performance and overall  
performance on a submarine patrol.

Medical Research Department  
U. S. Submarine Base  
New London, Connecticut

31 May 1945.

SUMMARY

1. A sample of enlisted men returned for assignment to New Construction submarines has been canvassed in order to determine the typical duty completed. For this canvass a questionnaire was developed which is also useful in clinical evaluations of the submarine experiences of an individual.

2. The survey confirms the hypothesis that the patrols completed by an individual differ radically from those completed by another in numbers, duration, and severity of attacks experienced. Data for the canvassed population on numbers of patrols completed, length of service, ages, and frequency of state-side assignments are reported.

3. It is noted that the Navy School backgrounds differ markedly. A considerable proportion were never examined or trained at New London, for example. The differences in selection and training backgrounds, in the light of the differences in submarine experience, suggest the value of complete examinations to ensure that all personnel satisfy minimum standards.

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### Problem:

Many enlisted men with submarine experience are received by Commander Submarines, Atlantic Fleet, for assignment to New Construction submarines. In order to determine standards for evaluating the condition of these men, it was decided that a canvass should be made of personnel received during a certain period. This canvass would trace the naval history of the population so that not only would there be an indication of the duty completed, but also so that there would be some information on such matters as ages, through what sources men entered the service, what schools were attended, how much leave had been granted, and how men rested between patrols.

### Procedure and Results:

Attached as Appendix A is a questionnaire which was developed by the staff of the Medical Research Department. This form was designed with a twofold purpose. It was meant first to afford clinical evaluations of the experience of each individual, and second to serve as a vehicle for assembling population data.

The questionnaire was administered during the second week in March, 1945, to a sample of enlisted men drawn in the following way:

1. Men returned for New Construction since 1 September, 1944, and assigned to Submarine Squadron One (N=114).
2. All experienced men assigned to two new Submarines (N=61).
3. Experienced men awaiting assignment (N=85).

All three groups together constitute a sample which is considered to be reasonably representative of the population returned currently for assignment to new ships.

The age level of the three groups is indicated in Table I.

TABLE I

Distributions of ages of the three sample groups.

Group	18-20	20-24	25-29	30-34	35-39	40-44	Total
Squadron One	0	47	40	20	5	2	114
Awaiting Assignment	0	45	26	10	3	1	85
Two Submarines	1	23	19	7	4	2	61
Total	1	120	85	37	12	5	260

There is considerable variation in the amount of submarine duty completed. For example, eleven of the one hundred fourteen men in Squadron One have made more than ten Pacific war patrols, whereas for the two hundred sixty men in Table I the mean for the entire number of Pacific and Atlantic patrols is only eight. This variation is so great that differences in rest, severity of patrols, etc., seem negligible.

In order to refine the data for tabulations of duty completed, the following exclusions were made from the two hundred sixty questionnaires: (a) all Steward's Mates were excluded, and (b) all men with no Pacific war patrols were excluded. This left a balance of two hundred eighteen men, each of whom had made at least one Pacific war patrol. This balance was then divided into two groups, according to rate upon entering Submarine service. Seventy-one were 2nd class petty officers or higher upon entering and one hundred forty-seven were 3rd class or below. Table II shows when these two groups were assigned to undersens duty.

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TABLE II

Distributions of dates entering Submarine service for two  
groups differentiated according to rate on entry.

Rate on Entry	Before 1941	Jan-Dec 1941	Jan-June 1942	July-Dec 1942	Jan-June 1943	July-Dec 1943	Jan-June 1944	Total
2nd class or higher	34	13	9	5	9	0	1	71
3rd class or below	22	36	35	30	19	5	0	147
Total	56	49	44	35	28	5	1	218

It is obvious from Table II that the population returned for New Construction varies greatly with respect to length of Submarine service. Before analyzing any data on durations or numbers of patrols completed, therefore, the questionnaires were further separated into groups according to when men entered. Tables III and IV show numbers of war patrols completed for the two populations. Most of these patrols were conducted in the Pacific.

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TABLE III

Numbers of war patrols for men entering Submarine service  
with rates 3rd class or below, according to date entering.

No. of Patrols	Before 1941	Jan-Dec 1941	Jan-June 1942	July-Dec 1942	Jan-June 1943	July Dec 1943	Total
1			1		1		2
2		1	2		1	2	6
3	1	2	1	3	1	2	10
4		1	5	4	1	1	12
5			3	6	6		15
6	4		5	4	2		15
7	3	9	6	6	3		27
8	3	6	5	5	1		20
9	2	7	2	2	2		18
10	2	7	2		1		12
11	5	2					7
12	1	1					2
13							
14	1						1
Total Number of Men	22	36	35	30	19	5	147

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TABLE IV

Numbers of war patrols for men entering Submarine service with rates 2nd class or higher according to date entering.

No. of Patrols	Before 1941	Jan-Dec 1941	Jan-June 1942	July-Dec 1942	Jan-June 1943	July-Dec 1943	Jan-June 1944	Total
2	1				1		1	3
3	1				1			2
4	2				3			10
5	5	1	3	1	3			11
6	3	2	1	2	3			6
7	4	2	1					7
8	4	1	1					10
9	7	5	3	1	1			13
10	2	2		1				4
11	3							3
12	1							1
13	1							1
Total Number of Men	34	13	9	5	9		1	71

Possible objection to any conclusions based on Tables III and IV above may be raised on the grounds that patrols differ in duration. However, there are other means for assessing how much duty has been completed. The Questionnaire asked for the number of days duration of each patrol. Although some inaccuracy in recall of such information is inevitable, the data afford another means for estimating total duration of Submarine duty. Tables V and VI indicate the distributions of the total numbers of days on patrol, listed according to date of entry in Submarine Service.

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TABLE V

Total number of days on patrol for men entering with rates 3rd class or below, according to date entering Submarine Service.

Total No. of days	Before 1941	Jan-Dec 1941	Jan-June 1942	July-Dec 1942	Jan-June 1943	July-Dec 1943	Total
0-49					1		1
50-99			1		1		2
100-149			1	1		3	6
150-199		1	2	2	2	1	8
200-249		2	3	3	1	1	10
250-299		2	6	9	6		24
300-349	1	3	5	6	5		22
350-399	3	10	5	5	2		28
400-449	6	2	6	2			14
450-499	4	6	2	1	1		12
500-549	2	6	4	1			13
550-599	2	2					4
600-649	1						1
650-699	1	1					2

Total Number of Men	22	36	35	30	19	5	147
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TABLE VI

Total number of days on patrol for men entering with rates 2nd class or higher, according to date entering Submarine Service.

Total No. of days	Before 1941	Jan-Dec 1941	Jan-June 1942	July-Dec 1942	Jan-June 1943	July-Dec 1943	Jan-Dec 1944	Total
0-49								
50-99	1							1
100-149	1		1		1		1	4
150-199	2	1	2		3			8
200-249	2	2		1	3			8
250-299	5		1	2	1			9
300-349	4	2	3		1			10
350-399	4		1					5
400-449	5	1		1				7
450-499	6	3	1	1				11
500-549	2	4						6
550-599								
600-649	1							1
650-699	1							1
Total No. of Men	34	13	9	5	9		1	71

The variation in patrol duty is emphasized in Tables III, IV, V and VI. It is possible, however, that those men who have had more patrols also have enjoyed more state-side leave and sea Construction duty. The data in Table VII show that there is some tendency in this direction, but not to the extent that the state-side experience compensates for the longer sea duty. For example, for seven men with nine or more patrols, this is the first time in the states since first ordered to the Pacific.

TABLE VII

Number of times in States (present duty excepted)  
since ordered to the Pacific for the first time.

Number of state-side leaves or duties

Number of Patrols	Three	Two	One	None	Total
1 - 4			11	39	50
5 - 8		8	66	35	109
9 -12	3	<del>10</del>	37	7	57
over 12		1	1		2
Total	3	19	115	81	218

This discussion is not addressed to the problem of whether the rotation policy is effective. However, extreme variations in duty completed are indicated. This suggests the need for correlary data on condition of personnel. Some interesting findings in this connection might develop from analyses of routine medical examinations for New Construction.

It is noted also that all degrees of school training are represented. Some reported no formal instruction after their first few weeks of Navy indoctrination; others listed several schools attended. Of the entire group (excluding eleven Steward's Mates) with patrol experience, only one hundred thirty-three or approximately fifty-three percent were graduates of the Submarine School in New London. Such variation in training and selection suggests that there are wide variations in abilities and skills.

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1. NAME \_\_\_\_\_ RATE \_\_\_\_\_ DATE \_\_\_\_\_  
Last First Middle
2. DATE OF BIRTH \_\_\_\_\_, 19\_\_\_\_.
3. How many Pacific submarine war patrols have you made? \_\_\_\_\_  
How many Atlantic submarine patrols? \_\_\_\_\_
4. When did you first enter submarine service? \_\_\_\_\_, 19\_\_\_\_.
5. Did you graduate from Basic Submarine School in New London? \_\_\_\_\_  
When? \_\_\_\_\_, 19\_\_\_\_.
6. Date enlisted in the Navy \_\_\_\_\_, 19\_\_\_\_.  
Have you been on active duty continuously since that time? \_\_\_\_\_
7. Where did you go directly after Basic Training (Boots)? \_\_\_\_\_
8. Rate prior to first submarine patrol \_\_\_\_\_?
9. Have you had surface-craft combat duty since Dec. 7, 1941? \_\_\_\_\_. How many months? \_\_\_\_\_.
10. Are you qualified in submarines? \_\_\_\_\_. When were you qualified? \_\_\_\_\_.
11. Date reported aboard your first Pacific submarine \_\_\_\_\_, 19\_\_\_\_.  
Your rate on that date \_\_\_\_\_.
12. How much of your time in the submarine service since Dec. 7, 1941 was actually served aboard submarines? \_\_\_\_\_.

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SUMMARY OF WAR PATROLS

(Do NOT name any ships)

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Answer the following questions as best you can:

FIRST WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_.  
If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days  
State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.

SECOND WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_.  
If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days  
State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol made on same sub as the previous patrol? \_\_\_\_\_.

THIRD WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_.  
If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days  
State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol made on the same sub as the previous patrol? \_\_\_\_\_.

FOURTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the State after this patrol? \_\_\_\_\_ If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days  
State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol made on the same sub as the previous patrol? \_\_\_\_\_.

FIFTH WAR PATROL:

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1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_ If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

SIXTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_ If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

SEVENTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_ If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

EIGHTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_ If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_ If so, for overhaul? \_\_\_\_\_ for New Construction? \_\_\_\_\_ How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in a Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

NINTH WAR PATROL:

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1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_. If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_. If so, for overhaul? \_\_\_\_\_. For New Construction? \_\_\_\_\_. How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in a Relief Crew after this patrol? \_\_\_\_\_ How Long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

TENTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_. If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_. If so, for overhaul? \_\_\_\_\_. For New Construction? \_\_\_\_\_. How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in a Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

ELEVENTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_. If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_. If so, for overhaul? \_\_\_\_\_. For New Construction? \_\_\_\_\_. How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in a Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.

TWELFTH WAR PATROL:

1. What general area? \_\_\_\_\_ How many days on patrol? \_\_\_\_\_.
2. Was the patrol designated "successful"? \_\_\_\_\_.
3. Were you severely depth-charged? \_\_\_\_\_.
4. Did you have a recreation period following this patrol? \_\_\_\_\_. If so, how many days? \_\_\_\_\_.
5. Did you return to the States after this patrol? \_\_\_\_\_. If so, for overhaul? \_\_\_\_\_. For New Construction? \_\_\_\_\_. How many days State-side leave, if any, did you have? \_\_\_\_\_.
6. Were you left in a Relief Crew after this patrol? \_\_\_\_\_ How long? \_\_\_\_\_.
7. Were you put on a tender during or after this patrol? \_\_\_\_\_ Why? \_\_\_\_\_.
8. Was this patrol on the same sub as previous patrol? \_\_\_\_\_.